

Supplement of: Effect of mass resolution and mass spectrometer on trace gas quantification in a boreal forest comparing three nitrate CIMS

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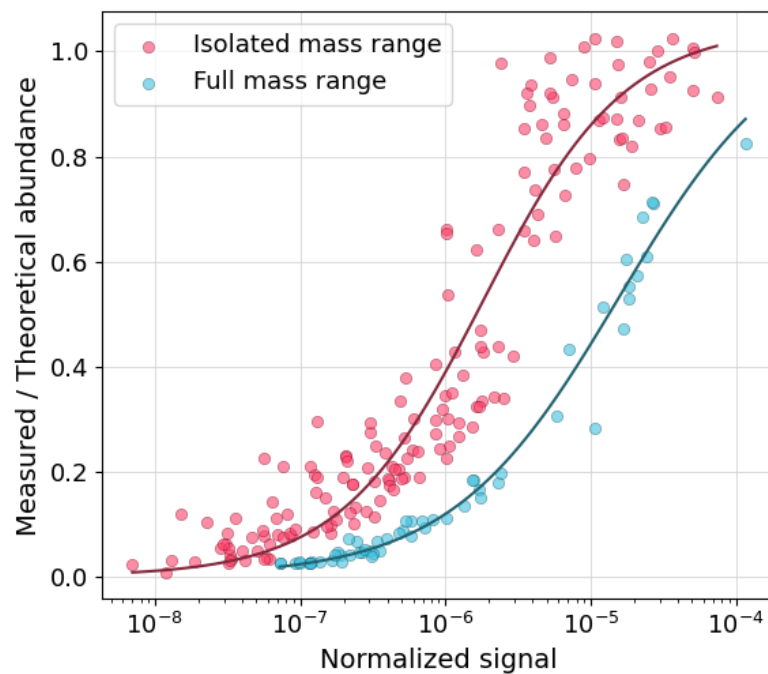


Figure S1: Sensitivity correction curves for MION-Orbitrap in both full and isolated mass ranges.

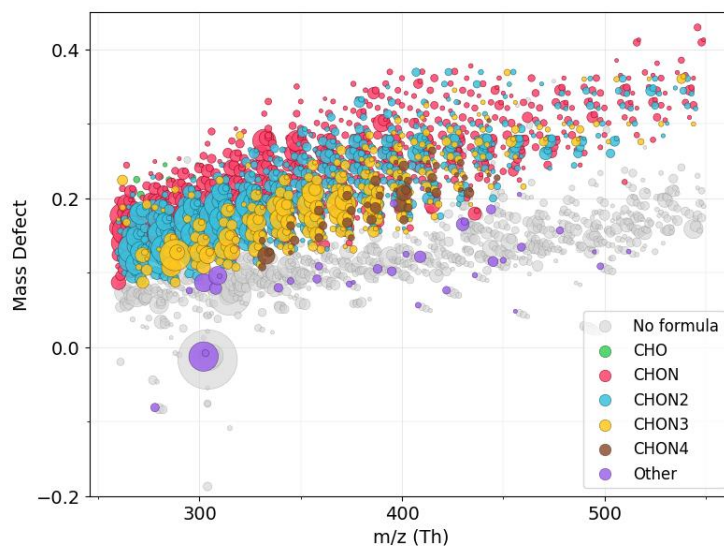


Figure S2: Kendrick mass defect plot of 24h averaged MION-Orbitrap (10.08.2023 13:30 - 11.08.2023 13:30). Including unidentified peaks, like the contaminant band.

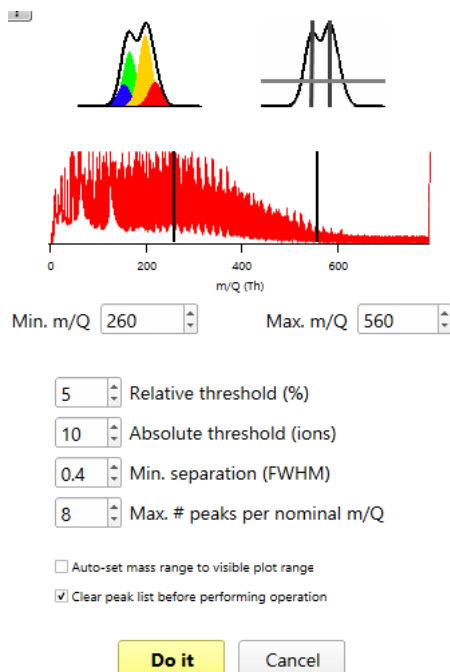


Figure S3: Peak finder settings in Tofware used for peak assignment. To generate a peak list with low user bias, the built-in peak finder was used with the above settings. This resulted in obtaining a list of 1245 peaks with no assignment of formulas. Not all peaks in this list are true peaks or have actual formulas.

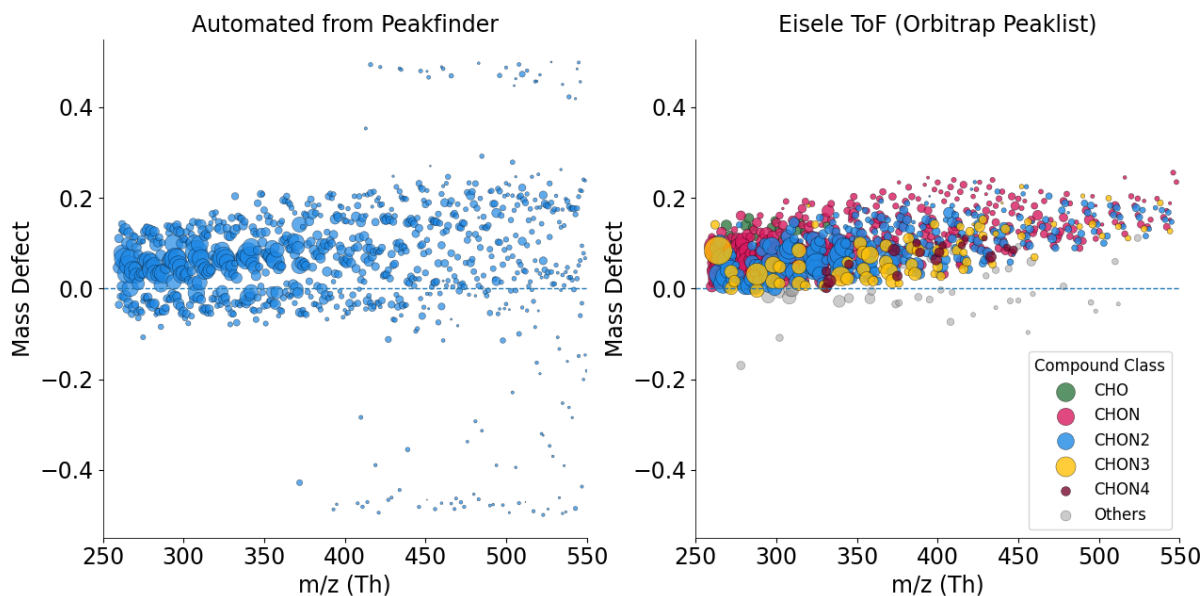


Figure S4: Mass Defect Plot corresponding to the Eisele-ToF peaklist. The left panel represents unassigned peaks obtained automatically from Tofware. The plot on the right is the peaklist obtained from orbitrap that was used as reference for peak assignment for the Eisele-ToF.

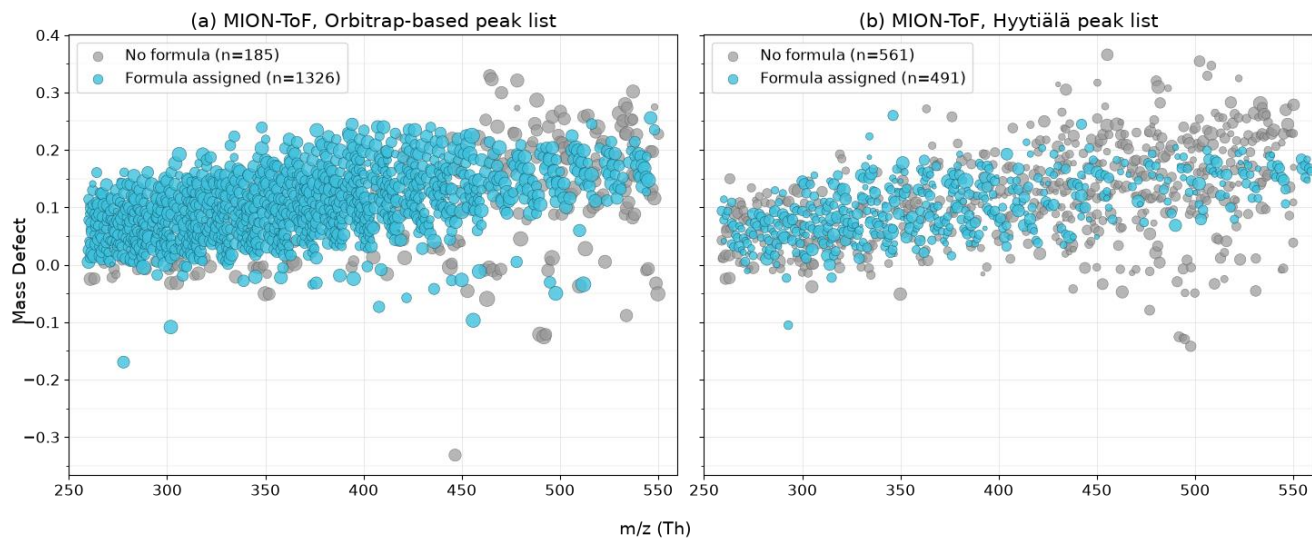


Figure S5: Mass defect plot of MION-ToF data analysed with a) the Orbitrap-based peak list and b) established Hyytiälä peak list. Identified peaks are in blue and unidentified in grey.

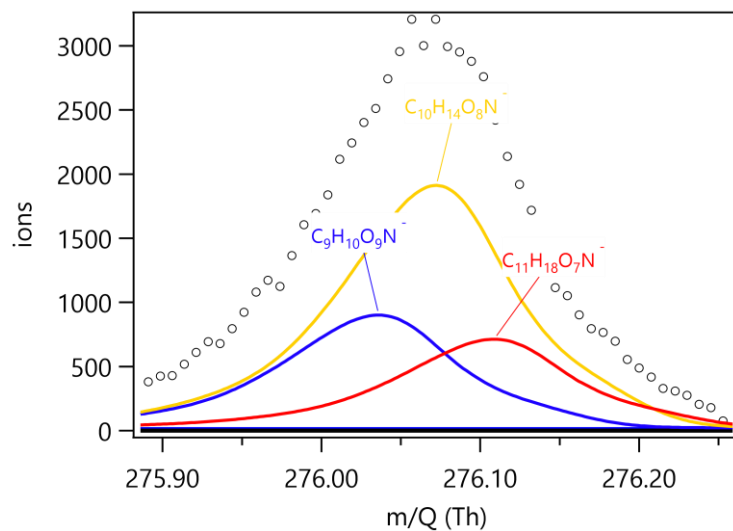


Figure S6: Three peaks at $m/z=276$ detected by Eisele-ToF. Compound $C_{12}H_{22}O_6N^-$ present in the Orbitrap Peak list is not present, hence not detected by Eisele-ToF

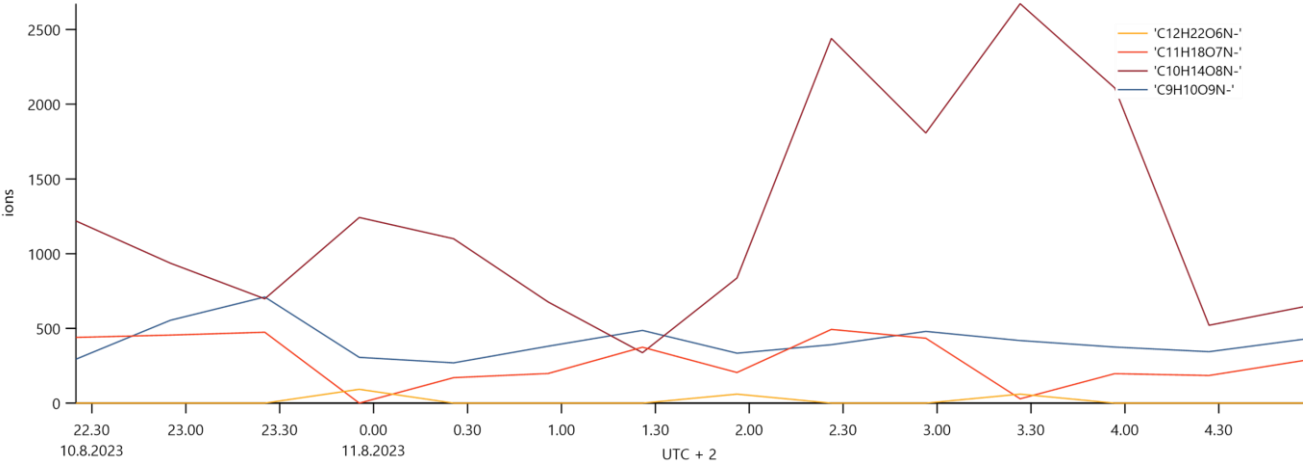
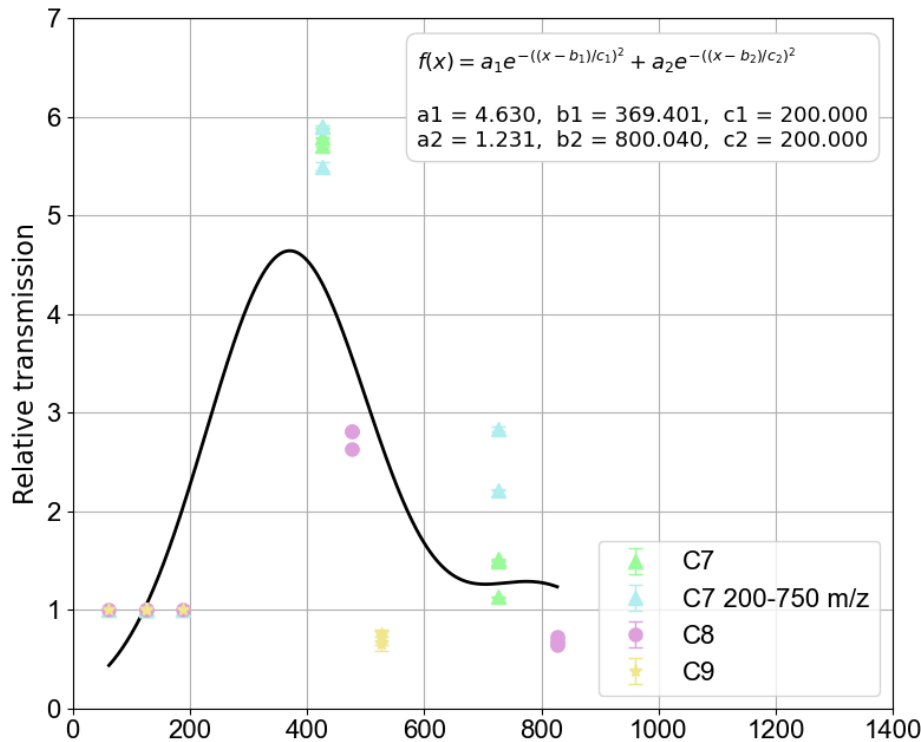


Figure S7: Timeseries of compounds detected at m/z 276. Compound C12H22O6N- extremely low.



FigureS8: Transmission calibration curve for the MION-Orbitrap. Data acquired following the procedure from Heinritzi et al 2016.

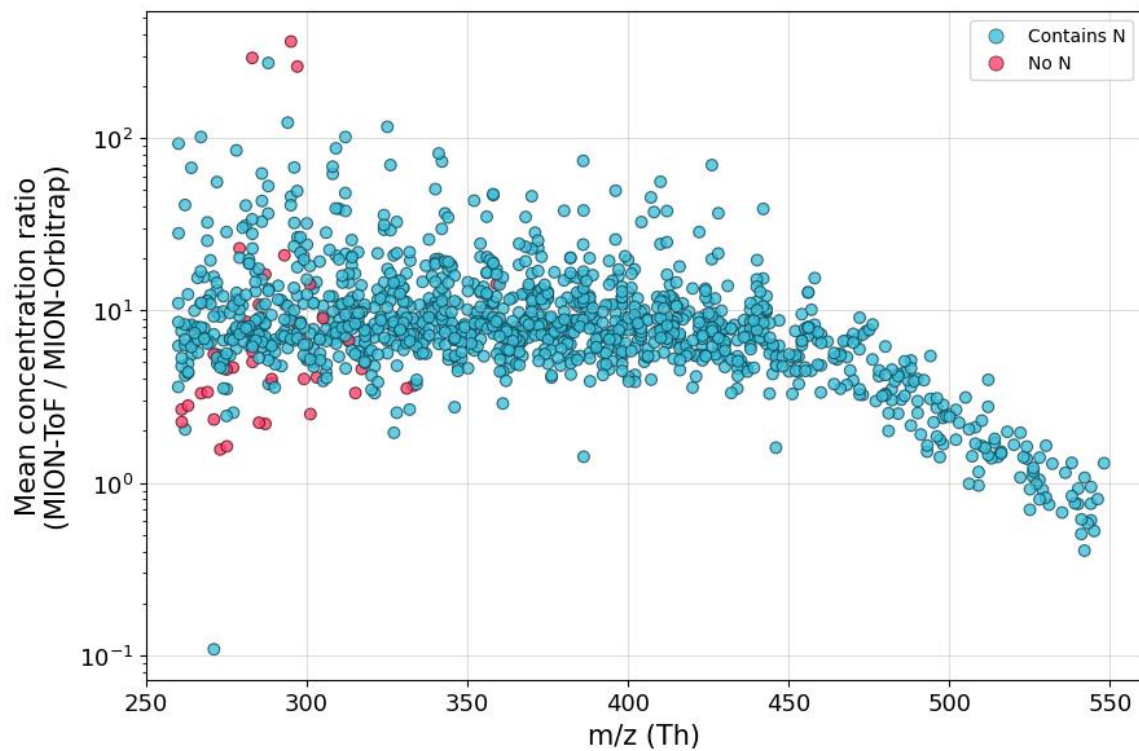


Figure S9: Ratio of abundances between MION-ToF and MION-Orbitrap as a function of m/z, using transmission and inlet loss corrected data.

Table S1: Peak lists and correlations (27.04.2026)

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